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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/565,928

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EXAMINER

DUONG, DIEU HIEN

ART UNIT

PAPER NUMBER

2821

MAIL DATE

DELIVERY MODE

11/06/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/565,928	<b>Applicant(s)</b> BOYLE, KEVIN R.	
	<b>Examiner</b> DIEU HIEN T. DUONG	<b>Art Unit</b> 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/12/2008</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This office action is a response to applicant's amendment 08/12/2008. In virtue of this amendment, claims 12-18 are newly added; thus, claims 1-18 are currently in the instant application.

#### ***Specification***

2. The disclosure is objected to because of the following informalities:

In page 1 of specification, after the title, the paragraph - This application is a 371 of PCT/IB04/02369 07/16/2004- - should be inserted.

Appropriate correction is required.

#### ***Abstract***

3. The abstract of the disclosure is objected to because the abstract is more than a single paragraph of 50 words in length. Correction is required. See MPEP § 608.01(b).

#### ***Drawings***

4. The drawing received on 08/12/2008 is acknowledged.

#### ***Information Disclosure Statement***

5. Information disclosure statement filed 08/12/2008 is acknowledged.

#### ***Claim Objections***

6. Claims 1-2, 4-8, 10-12, 13-15 and 18 are objected to because of the following informalities:

Claim 1, line 5, "that it is" should be deleted;

Claim 2, line 1, "An" should be changed to - The- -;

Claims 4-8, "An" should be changed to - The- -;

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Claims 10-12, line 1, "A" should be changed to - -The- -;

Claims 13-15, line 1, "An" should be changed to - -The- -;

Claim 18, line 1, "An" should be changed to - -The- -;

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kushihi (US 2002/0044092 A1), hereinafter "Kushihi" in view of Saito (6,255,994 B1).

Regarding claims 1-2 and 17-18, Kushihi discloses, in Figures 1, 4, 15 and par. [0056], a planar antenna assembly for use in two different frequency bands, the planar antenna assembly comprising a printed circuit board (52, Fig. 15) having a rf circuit thereon (54, 55; Fig. 15); a patch antenna (2, Fig. 1) spaced from a ground plane (Fig. 1), the patch antenna not having any slot (Fig. 1); and a feed (3, Fig. 1) coupling the planar antenna (2, Fig. 1) to the rf circuitry, the feed comprising components (22, 23) for reactively tuning the planar antenna by tuning a first frequency inductively and a second frequency capacitively, the first frequency being lower the second frequency (see paragraph [0056]); wherein the components is physically attached to the patch antenna; wherein the components (22, 23) comprise a series connected, parallel L-C network.

Kushihi does not disclose the printed circuit board having a ground plane.

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Saito discloses, in Figure 4 and col. 8, lines 33-34, the printed circuit board having a ground plane.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the printed circuit board of Kushihi with the printed circuit board having the ground plane as taught by Saito, doing so would reduce interference for the antenna device.

Regarding claim 3, Kushihi/Saito disclose, (Kushihi, Figures 1, 4a, 15 and par. [0056]; Saito, Fig. 4 and col. 8, lines 33-34), a communication apparatus comprising a housing (51, Fig. 15); a printed circuit board (52, Fig. 15) within the housing (51), the printed circuit board (52, Fig. 15) having a ground plane and a rf circuitry (54, 55) disposed thereon; a planar antenna (1, Fig. 15) within the housing (51) spaced from the substrate, the planar antenna (1) not having any slot (Figs. 1 and 4a); a dielectric (Fig. 4A) between the PCB (52) and the planar antenna (1); and a feed coupling the planar antenna (2) to the rf circuitry, the feed comprising components (22, 23) for reactively tuning the planar antenna by tuning a first frequency inductively and a second frequency capacitively, the first frequency being lower the second frequency (par. [0056]; wherein the components (22, 23) comprise a series connected, parallel L-C network.

Regarding claims 4-8 and 13-14, as applied to claim 3, Kushihi/Saito disclose, (Kushihi, Figures 1, 15 and par. [0056], Saito, Fig.4),

wherein the components are located adjacent the dielectric;

wherein the components are mounted on the PCB;

wherein the planar antenna is a planar inverted-L antenna (PILA);

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wherein the components comprise a series connected, parallel L-C network;

wherein the components comprise a transmission line;

wherein the components are attached to the planar antenna;

wherein the dielectric is air (Saito, Figure 4).

Regarding claim 9, Kushihi/Saito disclose, (Kushihi, Figures 1, 4a, 15 and par. [0056]; Saito, Fig. 4 and col. 8, lines 33-34), an rf module comprising a printed circuit board (52, Fig. 15) having a ground plane and rf circuitry thereon; a planar antenna (1) spaced from the ground plane, the planar antenna not having any slot; a dielectric in a space between the PCB and the planar antenna (Figs. 1, 4a); and a feed coupling the planar antenna to the rf circuitry, the feed comprising components for reactively tuning the planar antenna by tuning a first frequency inductively and a second frequency capacitively, the first frequency being lower than the second frequency (Kushihi, par. [0056]).

Regarding claims 10-11 and 15-16, Kushihi/Saito disclose, (Kushihi, Figures 1, 15 and par. [0056]; Saito, Fig.4, col. 8, lines 33-34),

wherein the components are located adjacent the dielectric;

wherein the components comprise a series connected, parallel L-C network;

wherein the components are attached to the planar antenna;

wherein the dielectric is air (Saito, Fig. 4).

### ***Conclusion***

9. Applicant's amendment necessitated the new ground of rejection presented in this Office action. Accordingly **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Inquiry***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIEU HIEN T. DUONG whose telephone number is (571)272-8980. The examiner can normally be reached on Monday - Friday, from 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on 571-272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

10/31/08

DD

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/Trinh Vo Dinh/

Primary Examiner, Art Unit 2821